

## AMENDMENTS TO THE CLAIMS

1. ~~(Cancelled) A magnetron oscillator characterized by comprising:  
a first magnetron; a launcher which extracts an output power of said first magnetron;  
an impedance generator which has one terminal connected to an output terminal of said launcher, and adjusts a load impedance of said first magnetron; and  
a reference signal supplier which is connected to the other terminal of said impedance generator, and supplies, to said first magnetron, a reference signal lower in electric power and stabler in frequency than the output from said first magnetron.~~
2. (Currently Amended) A magnetron oscillator characterized by comprising:  
a first magnetron;  
a launcher which extracts an output power of said first magnetron;  
an impedance generator which has one terminal connected to an output terminal of said launcher, and adjusts a load impedance of said first magnetron; and  
a reference signal supplier which is connected to the other terminal of said impedance generator, and supplies, to said first magnetron, a reference signal lower in electric power and stabler in frequency than the output from said first magnetron~~A magnetron oscillator according to claim 1, characterized in that at least one of the load impedance of said first magnetron and the electric power of the reference signal supplied from said reference signal supplier changes in synchronism with the output power of said first magnetron.~~
3. (Currently Amended) A magnetron oscillator characterized by comprising:  
a first magnetron;  
a launcher which extracts an output power of said first magnetron;

an impedance generator which has one terminal connected to an output terminal of said launcher, and adjusts a load impedance of said first magnetron; and  
a reference signal supplier which is connected to the other terminal of said impedance generator, and supplies, to said first magnetron, a reference signal lower in electric power and stabler in frequency than the output from said first magnetronA magnetron oscillator according to ~~claim 1~~, characterized by further comprising a synchronous controller which controls at least one of said impedance generator and said reference signal supplier on the basis of at least one of an anode current and the output power of said first magnetron.

4. (Original) A magnetron oscillator according to claim 3, characterized in that said synchronous controller comprises:

a detection unit which detects at least one of the anode current and output power of said first magnetron;

a data storage unit which stores characteristic data of said first magnetron; and

a control unit which controls at least one of said impedance generator and said reference signal supplier by referring to the characteristic data stored in said data storage unit on the basis of a detection result from said detection unit.

5. (Currently Amended) A magnetron oscillator according to claim 2 or claim 3~~claim 1~~, characterized in that said reference signal supplier comprises:

a reference signal oscillator which oscillates the reference signal; and

an irreversible member which guides the reference signal from said reference signal oscillator to said impedance generator, and guides the output power of said first magnetron, which is supplied from said impedance generator, in a direction of a load.

6. (Original) A magnetron oscillator according to claim 5, characterized in that

said irreversible member is one of a circulator, a directional coupler, and a branching/coupling device.

7. (Original) A magnetron oscillator according to claim 5, characterized in that said reference signal supplier further comprises an amplifier which amplifies the reference signal from said reference signal oscillator.

8. (Original) A magnetron oscillator according to claim 7, characterized in that said amplifier comprises a plurality of amplifiers, and said plurality of amplifiers are connected in series or parallel.

9. (Original) A magnetron oscillator according to claim 5, characterized in that said reference signal supplier further comprises a second magnetron having an output power higher than that of said reference signal oscillator and lower than that of said first magnetron, and supplies, to said first magnetron, an output power of said second magnetron having an oscillation frequency locked to a frequency of the reference signal by injection of the reference signal.

10. (Currently Amended) A magnetron oscillator according to claim 2 or claim 3, characterized by further comprising an isolator which is connected between said reference signal supplier and a load, absorbs a reflected power from said load, and guides the output power of said first magnetron, which is supplied from said reference signal supplier, in a direction of said load.

11. (Original) A magnetron oscillator according to claim 10, characterized in that said isolator comprises:

a dummy load which absorbs an electric power; and

a circulator which guides the reflected power from said load to said dummy load, and guides the output power of said first magnetron, which is supplied from said reference signal supplier, in a direction of said load.

12. (Currently Amended) A magnetron oscillator according to claim 2 or claim 3~~claim 1~~, characterized in that said reference signal supplier comprises:

a reference signal oscillator which oscillates the reference signal;  
an isolator having one terminal connected to said reference signal oscillator; and  
an irreversible member connected to the other terminal of said isolator, the other terminal of said impedance generator, and a load, said irreversible member guides the output power of said first magnetron, which is supplied from said impedance generator, in a direction of said load, and guides a reflected power from said load to said isolator, said isolator absorbs the reflected power from said irreversible member, and guides the reference signal from said reference signal oscillator to said irreversible member, and said irreversible member further guides the reference signal from said isolator to said impedance generator.

13. (Currently Amended) A magnetron oscillator according to ~~claim 1~~ claim 2 or claim 3, characterized in that said first magnetron comprises a cathode which emits electrons when heated, a heater which heats said cathode in accordance with an applied voltage, and an anode which forms an electric field with respect to said cathode, and said magnetron oscillator further comprises a heater power supply which decreases the voltage to be applied to said heater as an electric current flowing through said anode increases.

14. (Currently Amended) A magnetron oscillator according to ~~claim 1~~ claim 2 or claim 3, characterized by being used as a microwave power supply of a plasma processor

which performs predetermined processing on an object to be processed, by using a plasma generated by a microwave.